

“EXFOR to R33” on NDS Web

V.Zerkin, IAEA-NDS

Second Research Co-ordination Meeting on
Development of a Reference Database for Ion Beam Analysis
IAEA Headquarters, Vienna, Austria
18-21 June 2007

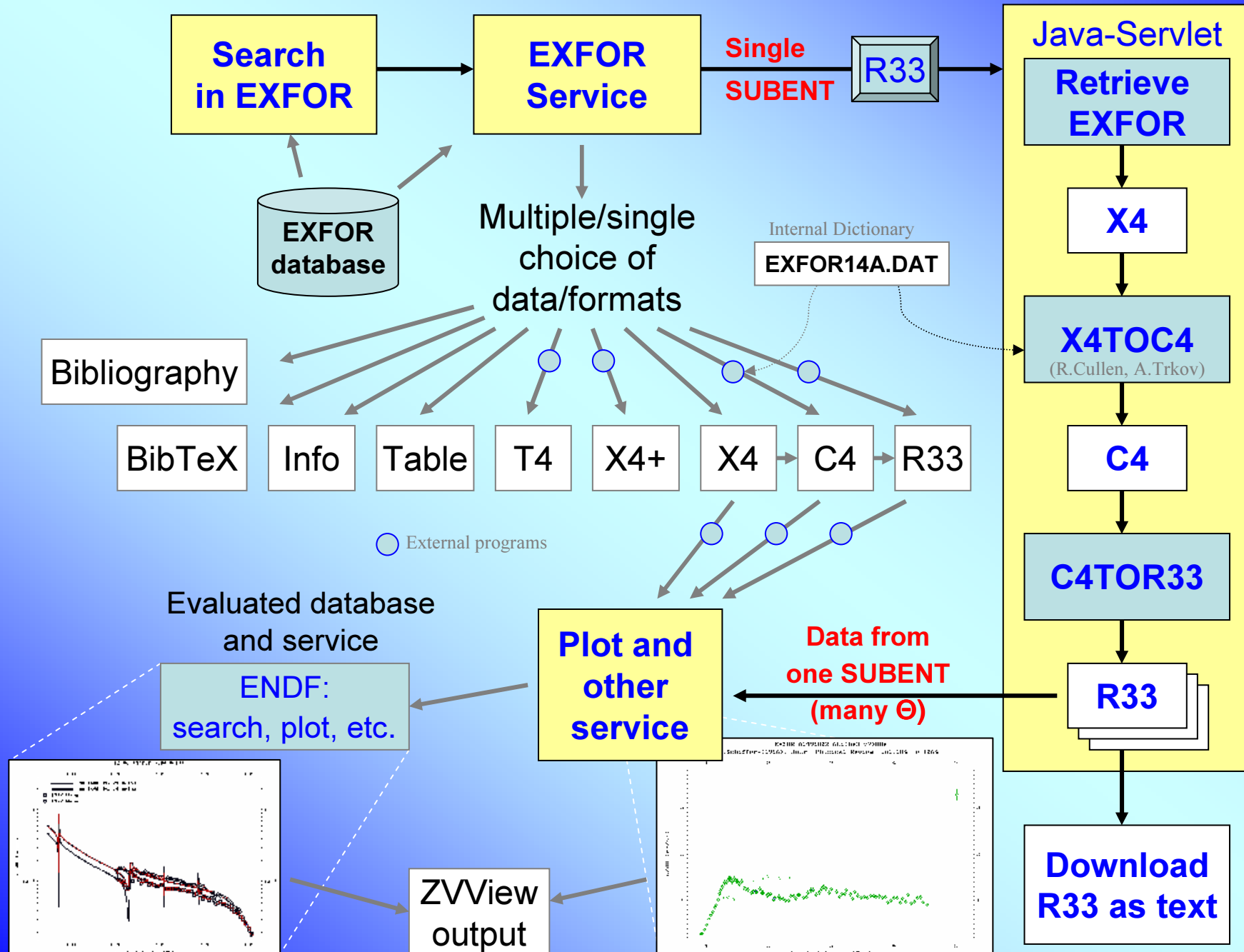
GOAL

- ✓ To provide access to EXFOR data in R33 format via Internet



Getting data from EXFOR in various formats on NDS Web site

How it works



How to...

EXFOR/CSIRS: Experimental Nuclear Reaction Data

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Address <http://nds121.iaea.org/exfor/exfor00.htm> Go Links

Experimental Nuclear Reaction Data (EXFOR)

Database Version of June 15, 2007

News

2007/05 Output in R33-IBANDL format: angular distributions; includes plotting

2007/03 Interactive Web plotting: zoom by mouse, actions by one click, more functions...

2007/01 Improved request page of Web interface (dark non-active criteria, move focus...)

2006/10 EXFOR+ Extended EXFOR [example] [about]

2006/10 BibTeX Bibliography for LaTeX [example] [about]

[History]

The EXFOR library contains an extensive compilation of experimental nuclear reaction data. Neutron reactions have been compiled systematically since the discovery of the neutron, while charged particle and photon reactions have been covered less extensively. The library contains data from 16432 experiments.

Standard Request [\(example\)](#); Requests: [Extended](#) [Advanced](#)

Submit **Reset**

Target ☒ li-6

Reaction ☒ he3.p

Product ☐

Quantity ☒ da*

Energy from to eV

Author(s)

Publication year

Accession #

Submit **Reset**

Options

☒ Exclude superseded data

☐ No reaction combinations (ratios,...)

Sort by:

☒ Reaction

☐ Accession# (Entry#, Subent#)

Feedback and User's Input

☒ Comments/Questions?

☒ Found error in data? Send message to debug

☐ Submit your experimental data for input to the database

Clone Request:

CINDA **ENDF**

Tip of the day: Advanced plotting [\[click here\]](#) [\[how-to\]](#)

Cross Sections with Covariances **SIG**

Note:

- all criteria are optional (selected by checking ☒)
- selected criteria are combined for search with logical AND
- criteria separated in a field by ";" are combined with logical OR
- wildcards and intervals are available

Create Window: Clone_EXFOR_CINDA_117106250825378226

Local intranet

X4/Servlet: Select - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/servlet/X4sSearch5

Home My Netscape Search Instant Message WebMail Radio People Yellow Pages Download Calendar Channels RealPlayer

New Tab X4/Servlet: Select

Request #1790
Results: Reactions: 5 Datasets: 18

Data Selection

Submit Reset

Data for Output: ☐ Selected ☐ Unselected ☒ All

Output Formats: ☒ EXFOR ☐ EXFOR+ ☒ Bibliography

Make Plot: ☐ Quick-plot (cross-sections only) ☐ Advanced plot [how-to] (test version)

Computational Output: 1) TAB ☐ 2) C4 ☐ &Plot.PS ☐

Narrow Energy (optional), eV: Min: Max:

n	Display	Year	Author-1	Energy range,eV	Points	Reference	Accession#	Pointer
1) Info 3-LI-6(HE3,P)4-BE-8,,DA,,REL Quantity: [DA] Differential c/s with respect to angle								
1	Info	X4	X4+	T4	1965	M.R.Fletcher+	5.00e+6 1.70e+7	170 J,NP,70,471,196508 A1545004 R33
2	Info	X4	X4+	T4	1956	J.P.Schiffer+	1.00e+6 5.00e+6	95 J,PR,104,1064,195611 A1495004 R33
2) Info 3-LI-6(HE3,P)4-BE-8,PAR,DA Quantity: [DAP] Partial differential cross section d/dA								
3	Info	X4	X4+	T4	1995	D.Baddou+	4.58e+6	35 J,CJP,73,74,1995 C0637002 R33
4	Info	X4	X4+	T4			4.58e+6	36 003 R33
5	Info	X4	X4+	T4	1980	A.J.Elwyn+	4.61e+5 1.85e+6	216 J,PR/C,22,1406,198010 T0031002 R33
6	Info	X4	X4+	T4			6.60e+5 1.85e+6	105 003 R33
7	Info	X4	X4+	T4			7.50e+5 1.85e+6	97 004 R33
8	Info	X4	X4+	T4			9.49e+5 1.85e+6	74 005 R33
9	Info	X4	X4+	T4	1977	M.Irshad+	1.40e+7	25 J,NP/A,286,483,197708 A1540002 R33
10	Info	X4	X4+	T4	1956	J.P.Schiffer+	8.98e+5 5.08e+6	201 J,PR,104,1064,195611 A1495002 R33
11	Info	X4	X4+	T4			8.99e+5 5.08e+6	191 003 R33
3) Info 3-LI-6(HE3,P)4-BE-8,PAR,DA,,EXP Quantity: [DAP] Partial differential cross section d/dA								
12	Info	X4	X4+	T4	1976	C.R.Gould+	3.00e+6 6.00e+6	56 J,NSE,60,(4),477,197608 F0001002 R33
13	Info	X4	X4+	T4			3.00e+6 6.00e+6	56 003 R33

Done

IAEA:X4-R33 - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/servlet/X4sGetR33?reqx=1790&subID=101495002&pointer=

Home My Netscape Search Instant Message WebMail Radio People Yellow Pages Download Calendar Channels RealPlayer

New Tab IAEA:X4-R33

See Plots: DA(E):2/2 DA(A):16/199
Thetas:
 1) 0.0 2) 150.0

Comment: Automatically converted from EXFOR via C4
 by IAEA-NDS EXFOR Web-Retrieval System.
 Software by V.Zerkin (IAEA, Vienna): version of 18-May-2007.
 "Study of the reaction mechanism for (He3,P) reactions
 with Li-6,B-10 and C-13"
 J.P.Schiffer, T.W.Bonner, R.H.Davis,
 F.W.Prosser, Jr.
 EXFOR:[A1495002]; X4Reaction:3-LI-6(HE3,P)4-BE-8,PAR,DA; X4Points:201

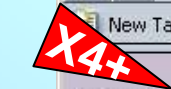
Version: R33?
 X4Number: A1495002 20040301
 Source: J.P.Schiffer+(1956), Jour. Physical Review, Vol.104, p.1064
 Reaction: 6Li(he3,p?)8Be
LevelEnergy: 0.00

Distribution: Energy
 Units: mb
 Composition:
 Masses: 3.0, 6.0, 1.0, 8.0
 Zeds: 2, 3, 1, 4
 Qvalue: 0.00, 0.00, 0.00, 0.00, 0.00
 Theta: 0.0
 Data:

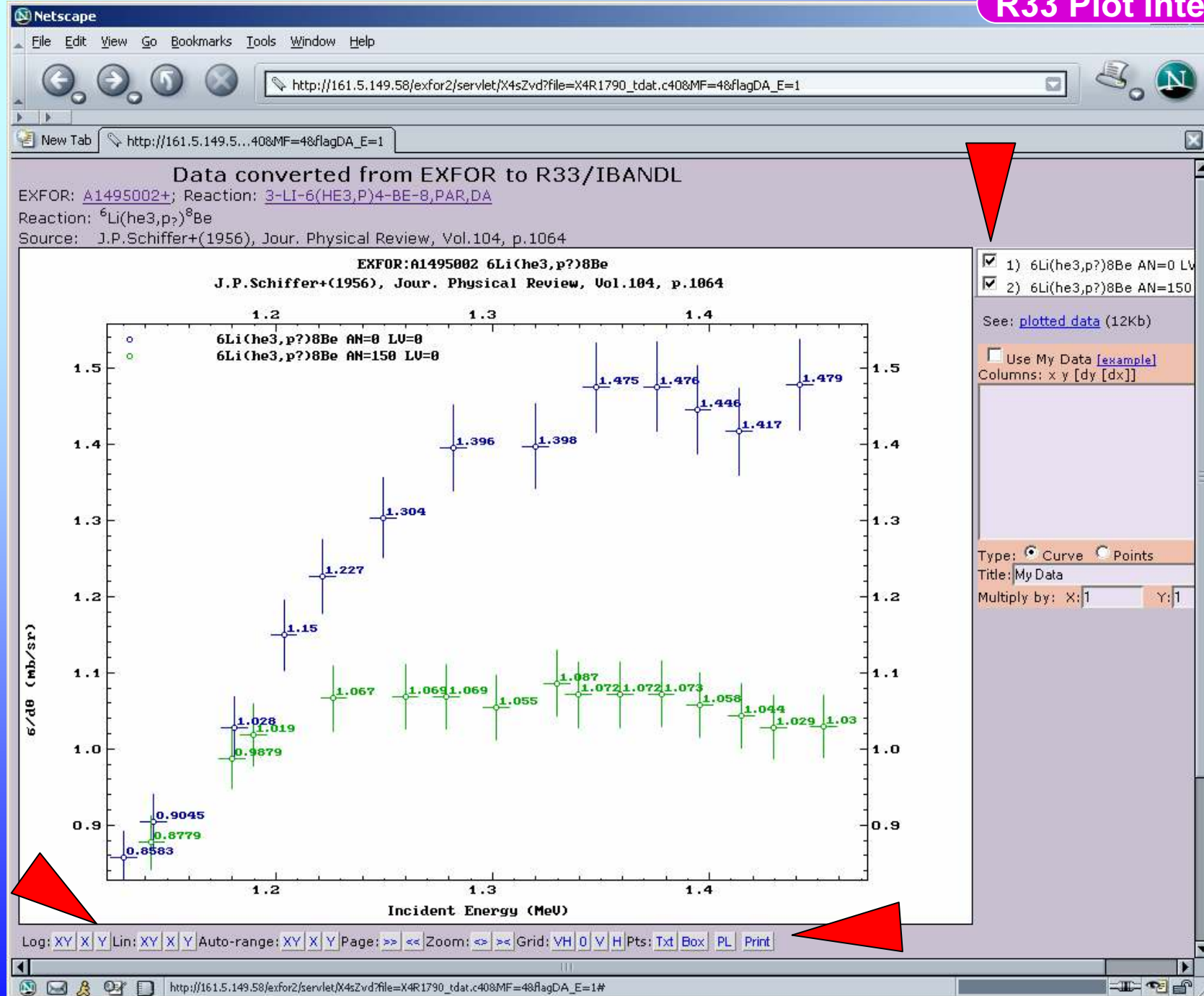
903.20,	6.00,	0.2869,	0.0115
926.60,	6.00,	0.303,	0.0121
963.80,	6.00,	0.3805,	0.0152
1001.00,	6.00,	0.4884,	0.0195
1033.00,	6.00,	0.6113,	0.0245
1061.00,	6.00,	0.6884,	0.0275
1093.00,	6.00,	0.7657,	0.0306
1130.00,	6.00,	0.8583,	0.0343
1144.00,	6.00,	0.9045,	0.0362
1181.00,	6.00,	1.028,	0.0411
1204.00,	6.00,	1.15,	0.046

Done

R33 (almost...)
 ? Q-value
 ? Energy-Level → Level



R33 Plot Interactions



EXFOR-Interpreted, IAEA-NDS, 2006 - Netscape

File Edit View Go Bookmarks Tools Window Help

New Tab EXFOR-Interpreted, IAEA-NDS, 2006

```

TITLE      Study of the reaction mechanism for (He3,P) reactions
           with Li-6,B-10 and C-13
AUTHOR      (J.P.Schiffer,T.W.Bonner,R.H.Davis,F.W.Prosser,Jr.)
INSTITUTE    (IUSARIC)
           #(IUSARIC) Rice University, Houston, TX, USA
REFERENCE    (J,PR,104,1064,195611)
           # (J,PR,104,1064,195611) Journ.: Physical Review, Vol.104, p.1064 (1956) USA
           #+ #NSR=1956SC01 #DOI=10.1103/PhysRev.104.1064
FACILITY      (VDG)
           #(VDG) Van de Graaff
SAMPLE      Target materials were evaporated on 2-mil foil backing,
           thick enough to stop the He-3 beam yet thin compared
           to the range of the proton groups studied
METHOD        (PHD)
           #(PHD) Pulse-height discrimination
DETECTOR      (SCIN) Thallium-activated CsI crystals mounted on
           DuMont 6291 photomultiplier tubes.
           #(SCIN) Scintillation detector
ERR-ANALYS    (DATA-ERR2) The pulse-height resolution of the detectors
HISTORY      (19800811C) Compilation produced by Arzamas RFNC-VNIIEF
           (20031013U) Last checking has been done.
ENDBIB        15
COMMON        1          3
DATA-ERR2
PER-CENT      4.
ENDCOMMON      3
ENDSUBENT      22
SUBENT        A1495002  20031013  20040322  20050926  0000
BIB           5          11
REACTION      (3-LI-6(HE3,P)4-BE-8,PAR,DA)
           #(3-LI-6(HE3,P)4-BE-8,PAR,DA) Quantity: [DAP] Partial differential cross section d/dA
SAMPLE      Metallic Li-6 enriched to 96%. 10 microg/cm2 thick.
ERR-ANALYS    (EN-ERR) Digitizing error
           (DATA-ERR) Digitizing error
           (DATA-ERR1) Some uncertainty in the cross-section was
           introduced by not knowing precisely what fraction of
           the pulses to attribute to the 2.9-MeV state and what
           fraction to the continuum together with other
           uncertainties in target thickness and geometry.
EN-SEC        (E-LVL,4-BE-8)
STATUS        (CURVE) Fig 1 down
ENDBIB        11
COMMON        4          3
E-LVL        EN-ERR  DATA-ERR1  DATA-ERR
MEV          MEV      PER-CENT    MB/SR
0.           0.006    20.         0.014
ENDCOMMON      3
DATA          3          201
EN           ANG      DATA
MEV          ADEC      MB/SR
0.8982      150.      0.2792
0.9032      0.        0.2869
0.9266      0.        0.303
0.9588      150.      0.3591
0.9638      0.        0.3805
1.001       0.        0.4884
1.033       0.        0.6113
1.042      150.      0.6104
           0.6004

```

Done

Experimental vs. evaluated data

EXFOR/CSISRS: Experimental Nuclear Reaction Data - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/exfor00.htm

New Tab EXFOR/CSISRS: Experimental Nuclear Rea...

Experimental Nuclear Reaction Data (EXFOR)

Database Version of May 21, 2007

News

- 2007/05 Output in R33-IBANDL format: angular distributions; includes plotting
- 2007/03 Interactive Web plotting: zoom by mouse, actions by one click, more functions...
- 2007/01 Improved request page of Web interface (dark non-active criteria, move focus...)
- 2006/10 EXFOR+ Extended EXFOR [example] [about]
- 2006/10 BibTeX Bibliography for LaTeX [example] [about]

[History]

The EXFOR library contains an extensive compilation of experimental nuclear reaction data. Neutron reactions have been compiled systematically since the discovery of the neutron, while charged particle and photon reactions have been covered less extensively. The library contains data from 16432 experiments.

Standard Request (example); Requests: [Extended](#) [Advanced](#)

1

Submit Reset

Target ☒ mg-24

Reaction ☒ p,el

Product ☐

Quantity ☒ da*

Energy from to eV

Author(s)

Publication year

Accession #

2

Submit Reset

Options

☒ Exclude superseded data

☒ No reaction combinations (ratios...)

Sort by:

☒ Reaction

☐ Accession# (Entry#, Subent#)

Feedback and User's Input

☒ Comments/Questions?

☒ Found error in data?

☒ Send message to debug

☒ Submit your experimental data for input to the database

Clone Request:

CINDA ENDF

Tip of the day: Advanced plotting [click here] [how-to]

Angular Distributions DA

25-Fe-54(N,EL), DA E12.00E+7

Note:

- all criteria are optional (selected by checking ☒)
- selected criteria are combined for search with logical AND
- criteria separated in a field by ";" are combined with logical OR
- wildcards and intervals are available

EXFOR: Advanced plot

X4/Servlet: Select - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/servlet/X4sSearch5

New Tab X4/Servlet: Select

Submit Reset

Data for Output: ☒ Selected ☐ Unselected ☐ All

Output Formats: ☒ EXFOR ☐ EXFOR+ ☒ Bibliography

Make Plot: ☐ Quick-plot (cross-sections only) ☒ Advanced plot [how-to] (test version)

Computational Output: 1) TAB ☐ 2) C4 ☐ &Plot.PS ☐

Narrow Energy (optional), eV: Min: Max:

n	Display	Year	Author-1	Energy range,eV	Points	Reference	Accession#	Pointer			
1)	Info	12-MG-24(P,EL)	12-MG-24,,DA								
Quantity: [DA] Differential c/s with respect to angle											
1	<input type="checkbox"/> Info	X4	X4+	T4	1992	V.V.Lazarev+	5.76e+6 6.19e+6	49	J,IZV,56,197,1992	F0762002	R33
2	<input type="checkbox"/> Info	X4	X4+	T4	1988	G.S.Blampied+	8.00e+8	51	J,PR/C,37,1987,198805	C0689002	R33
3	<input type="checkbox"/> Info	X4	X4+	T4	1988	K.H.Hicks+	2.50e+8	39	J,PR/C,38,229,1988	C1426002	R33
4	<input type="checkbox"/> Info	X4	X4+	T4	1984	K.Hatanaka+	8.00e+7	26	J,PR/C,29,13,1984	E0796002	R33
5	<input type="checkbox"/> Info	X4	X4+	T4	1984	E.A.Romanovskij+	5.64e+6 7.63e+6	256	J,IZV,48,977,1984	F0578002	R33
6	<input type="checkbox"/> Info	X4	X4+	T4			4.19e+6 4.86e+6	102		003	R33
7	<input type="checkbox"/> Info	X4	X4+	T4	1983	D.K.Hasell+	2.00e+7 3.49e+7	208	J,PR/C,27,482,198302	C0623002	R33
8	<input type="checkbox"/> Info	X4	X4+	T4			3.99e+7 4.49e+7	105		003	R33
9	<input type="checkbox"/> Info	X4	X4+	T4	1983	R.Roy+	1.50e+7 2.70e+7	176	J,NP/A,411,1,1983	C1332002	R33
10	<input type="checkbox"/> Info	X4	X4+	T4	1982	G.S.Blampied+	8.00e+8	64	J,PR/C,25,422,198201	C0580002	R33
11	<input type="checkbox"/> Info	X4	X4+	T4	1982	H.Sakaguchi	6.50e+7	27	J,MSK/A,36,305,1982	00032053;S	R33
12	<input type="checkbox"/> Info	X4	X4+	T4	1982	P.Schwandt+	1.35e+8	17	J,PR/C,26,55,198207	T0108003	R33
13	<input type="checkbox"/> Info	X4	X4+	T4	1980	H.Ohnuma+		0	J,JPJ,48,(6),1812,198006	R0014010	
14	<input type="checkbox"/> Info	X4	X4+	T4	1976	M.Herman+	9.10e+6	26	J,JP/G,2,831,1976	01090002	R33
15	<input type="checkbox"/> Info	X4	X4+	T4	1974	J.Eenmaa+	3.05e+7	36	J,NP/A,218,125,1974	C1206002	R33
16	<input checked="" type="checkbox"/> Info	X4	X4+	T4	1972	W.N.Wang+	1.51e+6 3.00e+6	119	J,CHP,10,1,1972	01030003	R33
17	<input type="checkbox"/> Info	X4	X4+	T4			2.60e+6 3.00e+6	36		004	R33
18	<input type="checkbox"/> Info	X4	X4+	T4	1967	G.M.Crawley+	1.75e+7	16	J,PR,160,981,196708	C0618004	R33
19	<input type="checkbox"/> Info	X4	X4+	T4	1967	A.A.Rush+	4.95e+7	45	J,NP/A,104,340,1967	D0294002	R33
20	<input type="checkbox"/> Info	X4	X4+	T4	1965	G.M.Crawley	1.75e+7	16	T,CRAWLEY,1965	C0828008	R33
21	<input type="checkbox"/> Info	X4	X4+	T4	1962	C.B.Fulmer	2.22e+7	1	J,PR,125,631,196201	C1019002	R33
22	<input type="checkbox"/> Info	X4	X4+	T4			2.22e+7	0		003	

Done

EXFOR: request evaluated data

X4/Servlet: Select - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/servlet/X4sMakeX4

New Tab X4/Servlet: Select

EXFOR Request #1791/5

Output Data

Format	Data (Size)
EXFOR	Text (14Kb) ZIP (3Kb)
Bibliography	html (1Kb) BibTeX (1Kb)
Computational	
C4	C4 (16Kb) C4.ZIP (2Kb) LST (2Kb)

Advanced Plotting: [LST](#) (4Kb)

Select experimental data for plotting...

Go to	Quantity type	#Plots
DA(A)	Differential data with respect to angle	30
Alt: Select energy range(MeV): Min= <input type="text" value="1.5"/> Max= <input type="text" value="3.1"/> DA(A)		118 [Reset]
DA(E)	Differential data - energy dependence at fixed angle	2
Alt: Select angle range(deg): Min= <input type="text" value="131.7"/> Max= <input type="text" value="151.2"/> DA(E)		2 [Reset]

Go to plot evaluated data...

[ENDF](#) Retrieve evaluated data and plot...

Page generated: 2007/06/15,20:35:04 by X4-Servlet on 161.5.149.58
Project: "Multi-platform EXFOR-CINDA-ENDF", [V.Zerkin](#), IAEA, 1999-2007
Request from: linux-ha2.iaea.org (161.5.131.43)

Done

Retrieve and plot both: experimental and evaluated data

The screenshot shows a Netscape browser window titled "E4/Servlet: Select - Netscape". The address bar displays the URL "http://161.5.149.58/exfor2/servlet/E4sSearch2". The page content includes a "Request #1500" header, followed by the title "ENDF Data Selection (Advanced Plot for EXFOR Request #1791)". Below the title are two buttons: "Retrieve+Plot" (highlighted by a red arrow) and "Reset". The "Data Selection" section features three radio buttons: "Selected" (selected), "Unselected", and "All". Below this, there are sorting and view options: "Sorted by: [Libraries]", "Reorder by: [Reactions]", and "View: basic" (selected) and "extended". A table of data entries is displayed, with the first entry highlighted in orange. The table includes columns for reaction type, energy, target, and other parameters. At the bottom of the page, there is a footer with generation and project information.

Request #1500

ENDF Data Selection (Advanced Plot for EXFOR Request #1791)

[Retrieve+Plot](#) [Reset](#)

Data Selection: ☒ Selected ☐ Unselected ☐ All

Sorted by: [Libraries] Reorder by: [Reactions] View: ☒ basic ☐ extended

1)	Info	Summary	MAT	12-MG-24	MAT=1225	NSUB=10010(P)	2MeV	IBA-EVAL 293	IPPE	A.Gurbich
MAT=1225 MF6 [DA/DE] Product energy-angle distributions										
1	Interpreted	UniPlot	MG-24(P,EL)MG-24-L0,DA/DE MT2 NK=1							

[Glossary]: meaning of abbreviations and variables
[About]: a few words on ENDF-6 format

Page generated: 2007/06/15,20:35:07 by E4-Servlet on 161.5.149.58
Project: "Multi-platform EXFOR-CINDA-ENDF", V.Zerkin, IAEA, 1999-2007
Request from: linux-ha2.iaea.org (161.5.131.43)

E4/Servlet: Output - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/servlet/E4sMakeE4

New Tab E4/Servlet: Output

ENDF Request #1500 (6)

Output Data

Format	Data (Size)
ENDF	Text (51Kb) ZIP (12Kb)

Extended Plotting:

Step 1. Select/prepare data for plotting...

#	Library	Nuclide	Status	*Prepared data
1) <input checked="" type="checkbox"/>	IBA-Eval	MG-24 id= 16173	-Ready-	PEN (53Kb) LST
2) <input checked="" type="checkbox"/>	EXFOR Request #1791		-Ready-	C4 X4 LST

*PEN: Processed evaluated data suitable for plotting - pointwise, 293K; made using [PREPRO](#) codes
C4: Experimental data in computational format (made using [X4TOC4](#) code)

Step 2. Go to plotting...

Go to plot	Quantity type	MF#	#Plots
DA(A)	Differential data with respect to angle	MF4	30
DA(E)	Differential data - energy dependence at fixed angle	MF4	2

Page generated: 2007/06/15,20:35:12 by E4-Servlet on 161.5.149.58
Project: "Multi-platform EXFOR-CINDA-ENDF", [V.Zerkin](#), IAEA, 1999-2007
Request from: linux-ha2.iaea.org (161.5.131.43)

Done

Select datasets for plotting

X4/Servlet Select - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/servlet/X4sProcessC4

New Tab X4/Servlet Select

EXFOR-Request #1791 ENDF-Request #1500

Advanced Plotting

Plot Selected Reset

Libraries:

- ☒ EXFOR - Experimental data
- ☒ IBA-EVAL:MG-24 (EvalID=16173)

Differential data - energy dependence at fixed angle: MF4 [DA(E)]

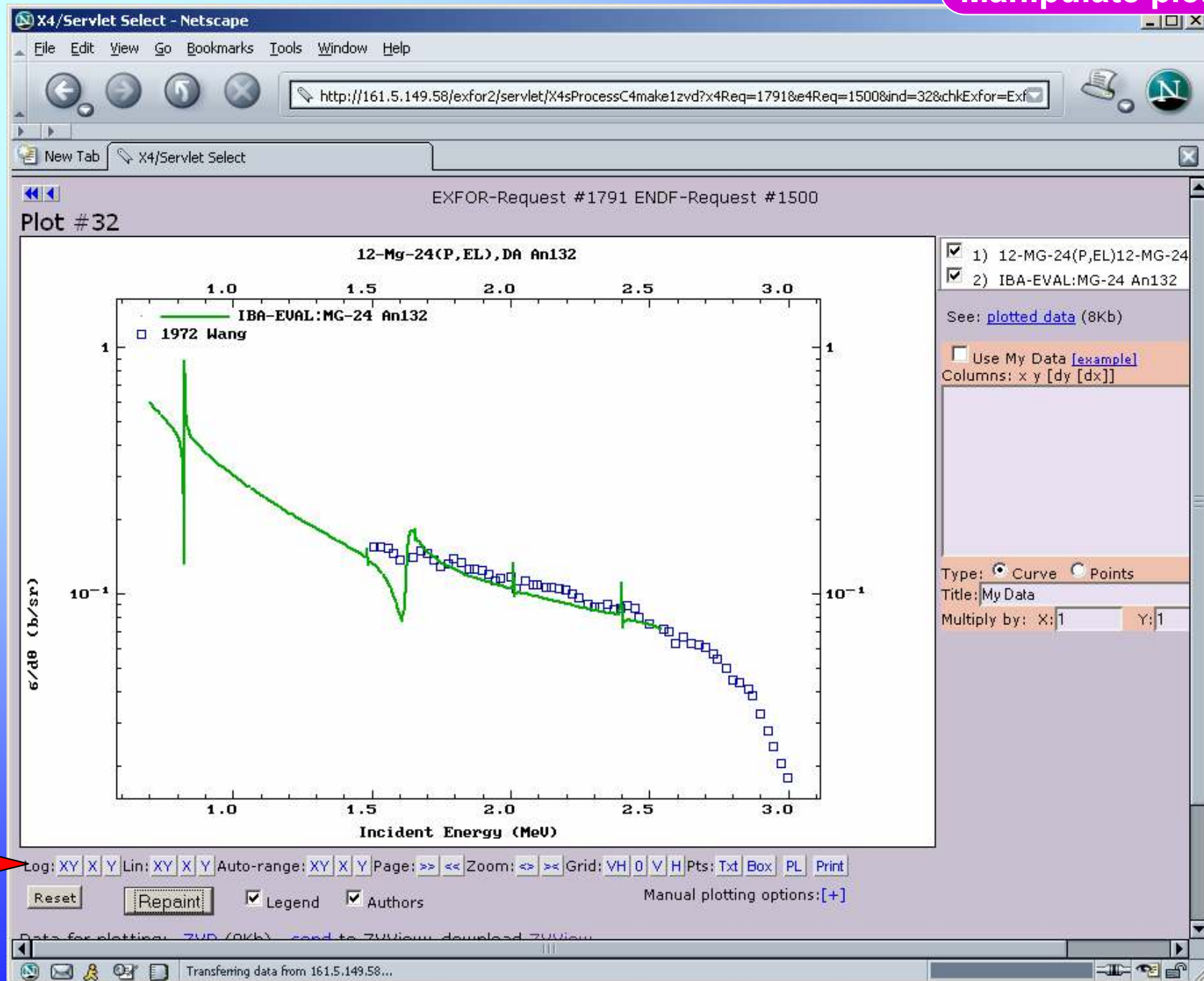
#	Index (plot)	Exp. points	E-Inc (eV)	Ang-Out (deg.)	ELv/E-Out (eV)	Target	Target ZA	Projectile ZA	Product ZA	Quantity (MF)	Reaction (MT)
12-MG-24(P,EL)12-MG-24,,DA											
1	<input type="checkbox"/> 31	60		151.20		Mg-24	12024	1001	1001	4	2
2	<input type="checkbox"/> 32	58		131.70		Mg-24	12024	1001	1001	4	2

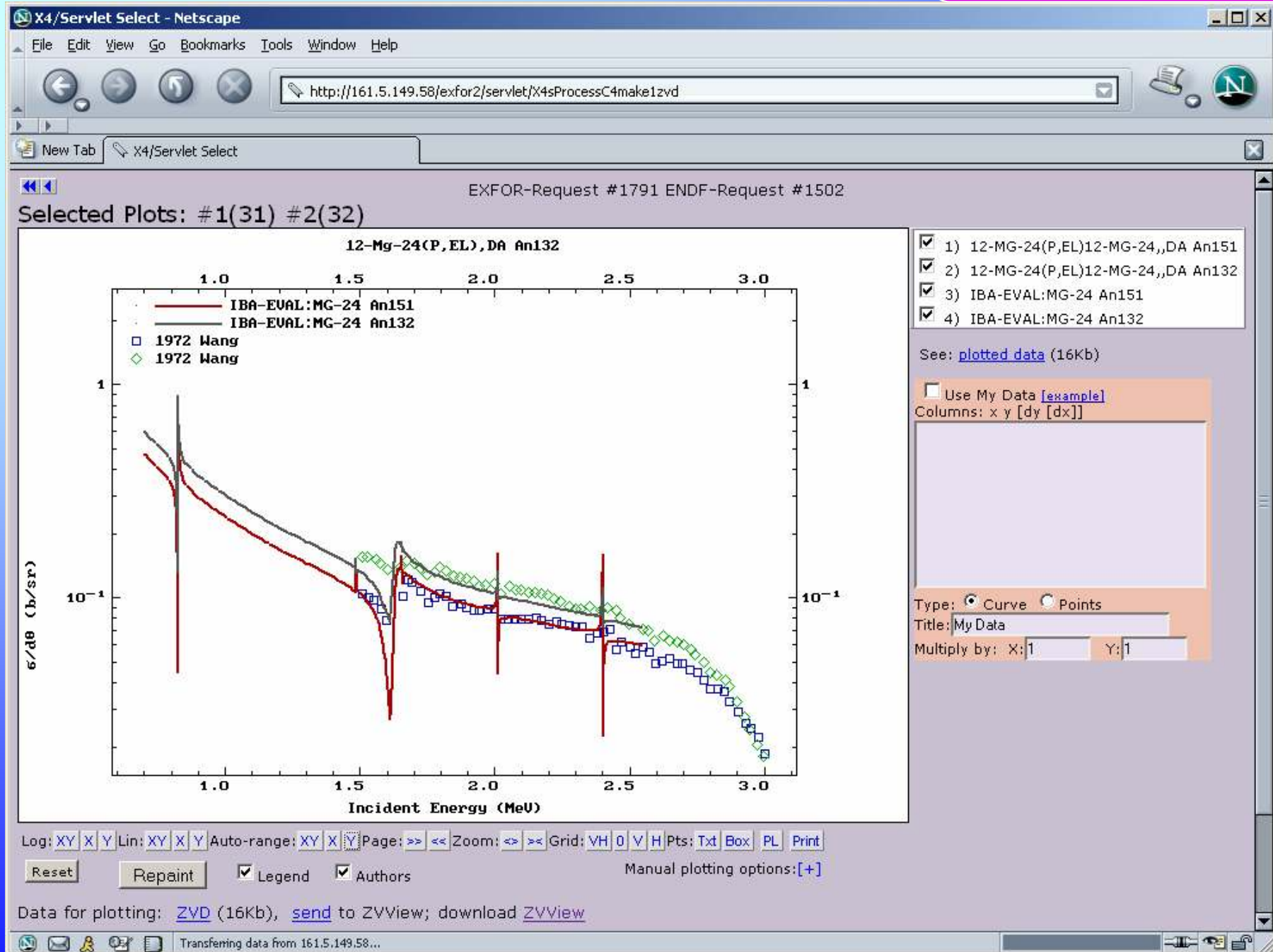
a

b Plot Selected Reset

Page generated: 2007/06/15,20:42:31 by X4-Servlet on 161.5.149.58
Project: "Multi-platform EXFOR-CINDA-ENDF", [V.Zerkin](#), IAEA, 1999-2007
Request from: linux-ha2.iaea.org (161.5.131.43)

Done





Rutherford Ratio

X4/Servlet: Select - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/servlet/X4sSearch5

New Tab X4/Servlet: Select

9	<input type="checkbox"/>	Info	X4	X4+	T4	1983 R.Roy+	1.50e+7	2.70e+7	176	J,NP/A,411,1,1983	C1332002	R33
10	<input type="checkbox"/>	Info	X4	X4+	T4	1982 G.S.Blanpied+	8.00e+8		64	J,PR/C,25,422,198201	C0580002	R33
11	<input type="checkbox"/>	Info	X4	X4+	T4	1982 H.Sakaguchi	6.50e+7		27	J,MSK/A,36,305,1982	00032053;S	R33
12	<input type="checkbox"/>	Info	X4	X4+	T4	1982 P.Schwandt+	1.35e+8		17	J,PR/C,26,55,198207	T0108003	R33
13	<input type="checkbox"/>	Info	X4	X4+	T4	1980 H.Ohnuma+			0	J,JPJ,48,(6),1812,198006	R0014010	
14	<input type="checkbox"/>	Info	X4	X4+	T4	1976 M.Herman+	9.10e+6		26	J,JP/G,2,831,1976	01090002	R33
15	<input type="checkbox"/>	Info	X4	X4+	T4	1974 J.Eenmaa+	3.05e+7		36	J,NP/A,218,125,1974	C1206002	R33
16	<input checked="" type="checkbox"/>	Info	X4	X4+	T4	1972 W.N.Wang+	1.51e+6	3.00e+6	119	J,CHP,10,1,1972	01030003	R33
17	<input type="checkbox"/>	Info	X4	X4+	T4		2.60e+6	3.00e+6	36		004	R33
18	<input type="checkbox"/>	Info	X4	X4+	T4	1967 G.M.Crawley+	1.75e+7		16	J,PR,160,981,196708	C0618004	R33
19	<input type="checkbox"/>	Info	X4	X4+	T4	1967 A.A.Rush+	4.95e+7		45	J,NP/A,104,340,1967	D0294002	R33
20	<input type="checkbox"/>	Info	X4	X4+	T4	1965 G.M.Crawley	1.75e+7		16	T,CRAWLEY,1965	C0828008	R33
21	<input type="checkbox"/>	Info	X4	X4+	T4	1962 C.B.Fulmer	2.22e+7		1	J,PR,125,631,196201	C1019002	R33
22	<input type="checkbox"/>	Info	X4	X4+	T4		2.22e+7		0		003	
2) Info 12-MG-24(P,EL)12-MG-24,,DA,,RTH												
Quantity: [DA] Differential cs d/dA rel.to Rutherford.scatt.												
23	<input type="checkbox"/>	Info	X4	X4+	T4	1986 M.Pignanelli+	3.50e+7		30	J,PR/C,33,40,1986	F0256004	R33
24	<input type="checkbox"/>	Info	X4	X4+	T4	1980 H.Ohnuma+	5.19e+7		23	J,JPJ,48,(6),1812,198006	E0120007	R33
25	<input type="checkbox"/>	Info	X4	X4+	T4	1951 F.P.Mooring+	3.97e+5	3.94e+6	491	J,PR,84,703,1951	C0855002	R33
26	<input type="checkbox"/>	Info	X4	X4+	T4		7.92e+5	8.56e+5	49		003	R33
27	<input type="checkbox"/>	Info	X4	X4+	T4		1.47e+6	1.67e+6	60		004	R33
28	<input type="checkbox"/>	Info	X4	X4+	T4		1.99e+6	2.03e+6	37		005	R33
29	<input type="checkbox"/>	Info	X4	X4+	T4		2.39e+6	2.43e+6	37		006	R33
3) Info 12-MG-24(P,EL)12-MG-24,PAR,DA												
Quantity: [DAP] Partial differential cross section d/dA												
30	<input type="checkbox"/>	Info	X4	X4+	T4	1991 R.M.Prior+	3.99e+6	6.10e+6	1462	J,NP/A,533,411,199110	C0075002	R33

Done

IAEA:X4-R33 - Netscape

File Edit View Go Bookmarks Tools Window Help

http://161.5.149.58/exfor2/servlet/X4sGetR33?reqx=1791&subID=120855002&pointer=

New Tab IAEA:X4-R33

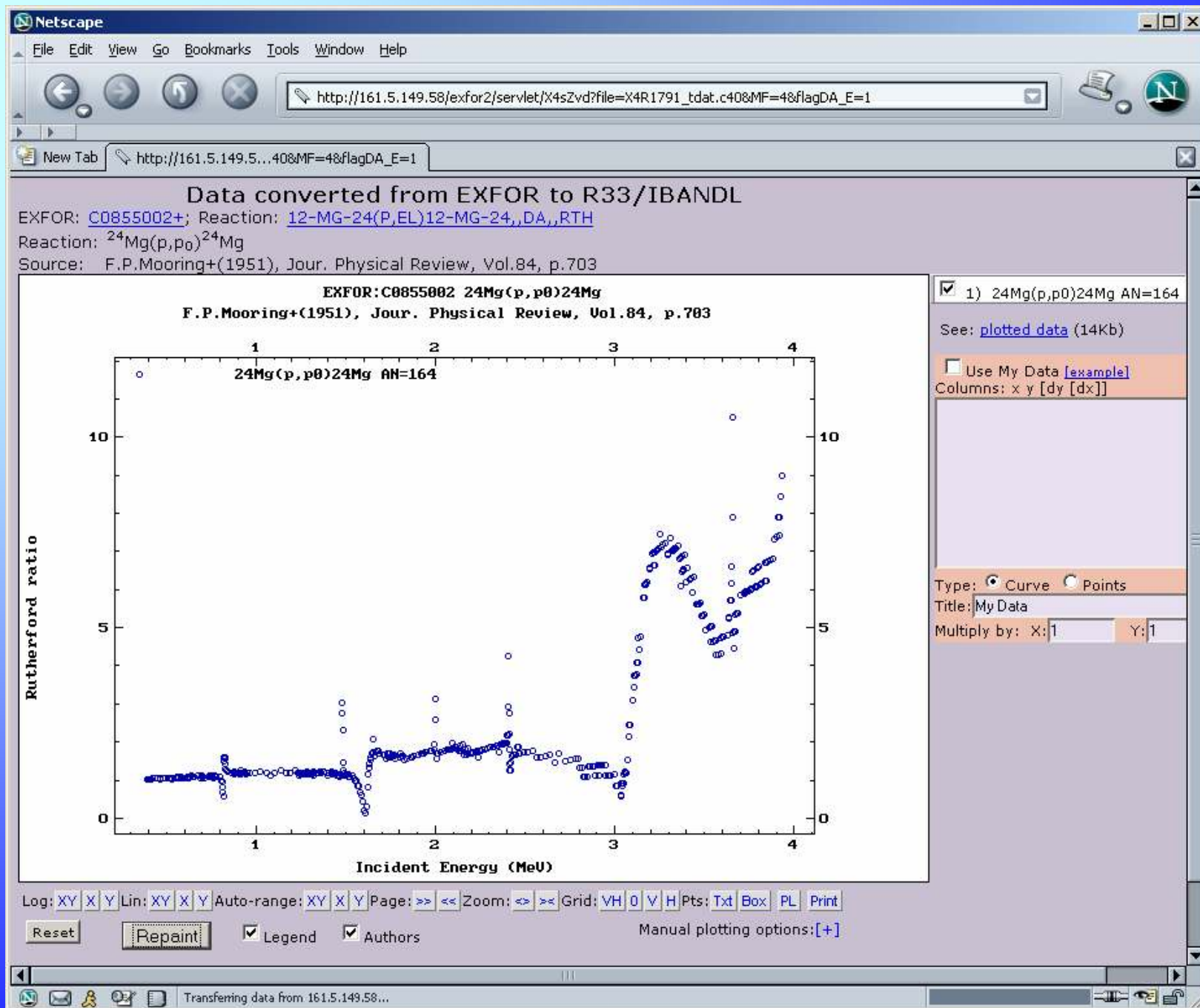
See Plots: DA(E):1/1 DA(A):16/482

Comment: Automatically converted from EXFOR via C4
by IAEA-NDS EXFOR Web-Retrieval System.
Software by V.Zerkin (IAEA, Vienna): version of 18-May-2007.
"Elastic Scattering of Protons from Mg24"
F.P.Mooring, L.J.Koester, E.Goldberg,
D.Saxon, S.G.Kaufmann
EXFOR:[C0855002]; X4Reaction:12-MG-24(P,EL)12-MG-24,,DA,,RTH; X4Points:491

Version: R33?
X4Number: C0855002 20020205
Source: F.P.Mooring+(1951), Jour. Physical Review, Vol.84, p.703
Reaction: 24Mg(p,p0)24Mg
Distribution: Energy
Units: rr
Composition:
Masses: 1.0, 24.0, 1.0, 24.0
Zeds: 1, 12, 1, 12
Qvalue: 0.00, 0.00, 0.00, 0.00, 0.00
Theta: 164.0
Data:

397.00,	0.00,	1.04,	0.00
399.00,	0.00,	1.02,	0.00
402.00,	0.00,	1.05,	0.00
415.00,	0.00,	1.05,	0.00
420.00,	0.00,	1.04,	0.00
422.00,	0.00,	1.03,	0.00
426.00,	0.00,	1.07,	0.00
440.00,	0.00,	1.07,	0.00
453.00,	0.00,	1.06,	0.00
467.00,	0.00,	1.08,	0.00
469.00,	0.00,	1.05,	0.00
471.00,	0.00,	1.06,	0.00

Done



The End